

**PALLID STURGEON/FISH AND WILDLIFE TECHNICAL WORKING GROUP
TERMS OF REFERENCE**

REV: JUNE 10, 2005

Role of the Technical Working Group

Provide unbiased and useful technical advice to the Plenary Group on pallid sturgeon and fish and wildlife issues related to the development of a Spring Rise proposal for the Missouri River. Present options to the Plenary Group for its consideration, but not make any final decisions for that group. Note: Members of the US Geological Survey have been requested to provide impartial technical assistance to this Technical Working Group.

Request from the Plenary – The Pallid Sturgeon/Fish and Wildlife Technical Working Group Terms of Reference

General.

The Plenary Group wants advice from the Pallid Sturgeon/Fish and Wildlife Technical Working Group (FWG) to assist it in the development of a starting point for discussions on recommended criteria for a Spring Rise that will protect the habitat and promote recovery of the pallid sturgeon (PS), and avoid adverse impacts on other fish and wildlife species. The Plenary Group would like the FWG to assess the impacts on the pallid sturgeon and other fish and wildlife of the three or more possible approaches for conducting a Spring Rise developed by the Hydrology and Water Quality Technical Working Group (HG), so that the Plenary can discuss and assess the advantages and disadvantages of each.

Assumptions driving the request.

The Plenary is making the following assumptions in this request:

- ◆ Any solutions that are developed must comply with and help achieve goals identified in the 2003 Biological Opinion (BiOp) issued by the US Fish and Wildlife Service.
- ◆ Any recommendation for criteria for Spring Rise must ensure that the criteria and method of adapting the criteria will be based on sound science and have a likelihood of enhancing the recovery of the Pallid Sturgeon.

Specific requests for advice.

General:

- ◆ How might each element of the proposed Spring Rise benefit or harm the Pallid Sturgeon and/or its habitat? How does the benefit/harm vary as the element is modified?
- ◆ Which elements are most/least important? Why?
- ◆ How frequently is a Spring Rise desirable or needed for species/habitat recovery?
- ◆ Is there a way to get successful Pallid Sturgeon reproduction without a Spring Rise?
- ◆ What are limiting factors in the upper river/and lower river for Pallid Sturgeon reproduction?
- ◆ What is being done in the upper regions of the river to promote species/habitat recovery?
- ◆ How do can the COE/FWS avoid wasting water while experiments on various kinds of rises are being conducted?
- ◆ What impacts will Spring Rise have on other species?
- ◆ What do we know about Spring Rise impacts on temperature and habitat needs?

Variation of the Spring Rise hydrograph.

- ◆ What ways might the Spring Rise biomodal hydrograph be modified to achieve desired impacts for the Pallid Sturgeon and other fish and wildlife, but at the same time minimize negative impacts on other basin stakeholders and their interests? Consider*:

- Fish and wildlife other than the PS?
- Flood control?
- Infrastructure along the banks of the river?
- Levies and interior drainage structures?
- Water intakes?
- Water quality (turbidity, exposure of mine tailings, etc.)?
- Downstream agriculture?
- Bank erosion?
- Navigation?
- Exposure of grave and cultural sites?
- Reservoir levels and recreation?
- Hydropower production?
- Thermal impacts on water for power plants?
- Ice flows?
- Others concerns, as relevant?

*Not listed in order of priority

- ◆ How can the different models of the Spring Rise be ranked? Which adjustments have the most/least predicted effect on the Pallid Sturgeon recovery program?

Data

- ◆ How can we maximize efficiency by linking studies conducted by the US Bureau of Reclamation (BOR) on Platte River Pallid recovery & additional discussion on Yellowstone River options?
- ◆ There is a need to consolidate historic data on pallid sturgeon breeding, hatching, rearing, and survival. What is available?

Restoration and Recovery Efforts beyond the Spring Rise:

- ◆ What can/should be done about misuse/abuse of shallow water habitat that may be important for the PS?
- ◆ Is non-point source pollution being addressed in the monitoring or study work?

Monitoring and Evaluation

- ◆ How will the Ft. Peck & Gavin's Point Spring Rises be compared or analyzed?
- ◆ How are Pallid Sturgeon responding to high water flows?
- ◆ Can you isolate the variables to determine what Pallid Sturgeon are responding to?
- ◆ What are effects on system hydrology?
- ◆ What do species need?

Adaptive management

- ◆ In what ways should the Spring Rise process be adjusted in response to monitoring?
- ◆ When is it likely that the first adjustments should be made?
- ◆ How often after that? Annual? Semiannual?
- ◆ How are the adaptive changes made?

Approach:

- ◆ Who typically pays for mitigation/recovery efforts?
- ◆ How can independent science be used to monitor the recovery?
- ◆ What new science gives credible latitude to depart from prescriptions of '03 BiOp?
Flow/Duration/Timing?